

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel claims 15-19, 22, and 41. Please amend claims 1, 14, 23, 27, 86, and 91, as follows:

Listing of Claims:

1. (Currently amended) A method for calculating values for pixels of an image, comprising:

calculating less than three sample values for pixels of an image in accordance with a sampling pattern for each pixel, the sampling pattern for consecutive pixels alternating between a first and a second sampling pattern, each sampling pattern defining one or more sampling locations at which sample values are calculated and the second sampling pattern corresponds to the first sampling pattern rotated 90 degrees, the sampling locations being relative to a pixel; and

determining a value for at least one pixel by combining sample values calculated for the sampling locations for the pixel.

2. (Original) The method of claim 1 wherein each sampling pattern defines two sample locations and calculating sample values comprises calculating a pair of sample values whenever sample values for a pixel are calculated in accordance with the first or second sampling pattern, the sampling patterns alternating from one pixel to the next.

3. (Previously presented) The method of claim 2 wherein the pixels of the image are arranged along rows and columns parallel to first and second perpendicular axes, respectively, and the less than three sample locations per sampling pattern for at least two pixels are arranged along a line parallel to neither axis.

4. (Previously presented) The method of claim 2 wherein calculating less than three sample values comprises calculating two sample values at sample positions arranged according to either a first or second sampling pattern, the first sampling pattern having sample positions on opposite sides of a line parallel to a first axis and dividing a respective pixel region in two, and the second sampling pattern having sample positions on opposite sides of a line parallel to a second axis and dividing a respective pixel region in two, the second axis perpendicular to the first axis.

5. (Original) The method of claim 4 wherein the two lines parallel to the respective axes pass through the centers of respective pixels.

6. (Original) The method of claim 5 wherein each sampling pattern has a sample position on each side of both of two lines parallel to respective axes and passing through the center of respective pixels.

7-13. (Cancelled)

14. (Currently amended) A method for generating an image having pixels arranged in rows and columns parallel to first and second perpendicular axes, respectively, the method comprising:

calculating two sample values less than three sample values for pixels of the image in accordance with a plurality of sampling patterns, one sampling pattern per pixel, one pair of sampling points per sampling pattern, a first sampling pattern defines sample positions relative to a given pixel on opposite sides of a line parallel to a first axis of the image and dividing the respective pixel in two, and a second sampling pattern defines sample positions relative to a given pixel on opposite sides of a line parallel to a second axis of the image and dividing the respective pixel in two, the second sampling pattern substantially corresponding to the first sampling pattern rotated 90 degrees; and

calculating a value for at least one pixel of the image from a respective pair or pairs of calculated sample values.

15-19. (Cancelled)

20. (Original) The method of claim 14 wherein all sampling patterns are considered as dividing the regions of respective pixels into the same four-by-four array of sub-regions and four potential sample positions are arranged within the array in a manner whereby no two potential sample positions are located in the same row, column, or diagonal of sub-regions, the plurality of sampling patterns comprising first and second sampling patterns, each defining two sampling positions from the four potential sampling positions, the first sampling pattern having sample locations in the first and fourth rows of the array and the second sampling pattern having sample locations in the second and third rows of the array.

21. (Original) The method of claim 14 wherein the sampling patterns alternate per pixel along at least one row or column of pixels.

22. (Cancelled)

23. (Currently amended) A method for calculating values for pixels of an image having the pixels arranged in rows and columns parallel to first and second perpendicular axes, respectively, the method comprising:

calculating sample values for pixels of the image in accordance with a plurality of sampling rates, the sampling rate defined by the number of samples per pixel and at least one sample per pixel, the sampling rate differing for at least two pixels of the image; and

calculating values for pixels of the image from respective calculated sample values.

24. (Original) The method of claim 23 wherein the sampling rate alternates per pixel for consecutive pixels along lines parallel to one or the other axes of the image for at least some of the horizontal or vertical lines of pixels of the image.

25. (Original) The method of claim 23 wherein the sampling rate is constant for the pixels arranged along any given line parallel to the first axis and varies among the plurality of sampling rates for the pixels arranged along any given line parallel to the second axis.

26. (Original) The method of claim 25 wherein first and second sampling rates alternate per pixel for consecutive pixels in any line parallel to the second axis.

27. (Currently amended) A method for calculating values for pixels of an image having the pixels arranged in rows and columns parallel to first and second perpendicular axes, respectively, the method comprising:

calculating sample values for pixels of the image in accordance with first and second sampling rates, the sampling rate defined by the number of samples per pixel and at least one sample per pixel, the sampling rate remaining constant for consecutive pixels arranged along any one given line parallel to the first axis and varying between the first and second sampling rates for consecutive pixels arranged along any one given line parallel to the second axis; and

calculating values for pixels of the image from respective calculated sample values.

28. (Original) The method of claim 27 wherein the pixels of the image are arranged in rows parallel to the first axis and columns parallel to the second axis, and the first and second sampling rates alternate every row of pixels.

29. (Original) The method of claim 27 wherein the first sampling rate is two samples per pixel and the second sampling rate is one sample per pixel.

30. (Original) The method of claim 27 wherein the first sampling rate is two samples per pixel and the second sampling rate is one sample per pixel, the two sample locations per pixel for the first sampling rate arranged within a pixel along a line forming an acute angle with respect to either the first or second axes.

31. (Original) The method of claim 27 wherein the first sampling rate is two samples per pixel and the second sampling rate is one sample per pixel, the two samples per pixel for the first sampling rate arranged within a pixel substantially along and on opposite sides of a line parallel to either the first or second axes that divides the pixel in two, the axis to which the line is parallel alternating per consecutive pixel arranged along a line parallel to the first axis.

32. (Original) The method of claim 31 wherein the two samples per pixel of the first sampling rate vary for every other consecutive pixel lying along a line parallel to the first axis between a given sampling pattern and another sampling pattern which is substantially the same pattern rotated 90 degrees.

33-41. (Cancelled)

42. (Previously presented) A method for calculating values for pixels of an image having its pixels arranged in rows and columns parallel to first and second perpendicular axes, respectively, the method comprising:

calculating sample values for pixels of the image in accordance with a sampling pattern, the region of potential sampling locations relative to a pixel considered as divided evenly into a four-by-four array of sub-regions, the sampling pattern having only two sample locations relative to a pixel, each sample location located at one of four candidate sampling locations, and the candidate sampling locations arranged in a manner whereby no two of the four candidate sample locations for a given sampling pattern are located along the same row, column, or diagonal of sub-regions; and

calculating values for pixels of the image from sample values calculated for respective pixels.

43. (Original) The method of claim 42 wherein the two sample locations are located in the first and fourth rows of the array of sub-regions.

44. (Original) The method of claim 43 wherein the two sample locations are located substantially at the center of respective sub-regions.

45. (Original) The method of claim 43 wherein the two sample locations are located at the center of respective sub-regions.

46. (Original) The method of claim 42 wherein the two sample locations are located in the second and third rows of the array of sub-regions.

47. (Original) The method of claim 46 wherein the two sample locations are located substantially at the center of respective sub-regions.

48. (Original) The method of claim 46 wherein the two sample locations are located at the center of respective sub-regions.

49-85. (Cancelled)

86. (Currently amended) An apparatus for rendering of an image having pixels arranged in rows and columns parallel to first and second perpendicular axes, respectively, the apparatus sampling at only two sample locations relative to a pixel in accordance with a sampling pattern, the sampling pattern for a pixel alternating per pixel between first and second sampling patterns for at least one of consecutive pixels arranged along any given line parallel to the first axis and for consecutive pixels arranged along any given line parallel to the second axis,

the second sampling pattern corresponding to the first sampling pattern rotated 90 degrees, the apparatus further calculating values for pixels of the image from respective sample values.

87. (Cancelled)

88. (Previously presented) The apparatus of claim 86 wherein a sampling pattern is considered as dividing a given pixel into a four-by-four array of sub-pixels and four potential sample positions are considered to be arranged within the array in a manner whereby no two potential sample positions are located in the same row, column, or diagonal of sub-pixels, at least one sampling pattern having two sampling positions from the four potential sampling positions.

89-90. (Cancelled)

91. (Currently amended) An apparatus for rendering of an image having pixels arranged in rows and columns parallel to first and second perpendicular axes, respectively, the apparatus calculating sample values for pixels in accordance with first and second sampling rates, the sampling rate defined by the number of samples per pixel and at least one sample per pixel, the sampling rate remaining constant for consecutive pixels arranged along any given line parallel to the first axis and the sampling rate varying between the first and second sampling rates for consecutive pixels arranged along any given line parallel to the second axis, the apparatus further calculating values for the pixels of the image from the respective sample values.

92-97. (Cancelled)